

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
15 July 2004 (15.07.2004)

PCT

(10) International Publication Number
WO 2004/058194 A1

(51) International Patent Classification⁷: A61K 6/06, C04B 28/06

(21) International Application Number:
PCT/SE2003/002090

(22) International Filing Date:
30 December 2003 (30.12.2003)

(25) Filing Language: Swedish

(26) Publication Language: English

(30) Priority Data:
0203910-5 31 December 2002 (31.12.2002) SE

(71) Applicant (for all designated States except US): DOXA
AKTIEBOLAG [SE/SE]; Axel Johanssons Gata 4-6,
Kristallen, S-754 51 Uppsala (SE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): HERMANSSON,
Leif [SE/SE]; Länna Gård, S-740 11 Länna (SE). EN-
GQVIST, Håkan [SE/SE]; Margaretvägen 12, S-741 44
Knivsta (SE).

(74) Agents: KYLIN, Peter et al.; Hynell Patenttjänst AB, Pa-
tron Carls väg 2, S-683 40 Hagfors/Uddeholm (SE).

(81) Designated States (national): AE, AG, AL, AM, AT (util-
ity model), AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,
CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DE
(utility model), DE, DK (utility model), DK, DM, DZ, EC,
EE (utility model), EE, EG, ES, FI (utility model), FI, GB,
GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG,
KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG,
MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL,
PT, RO, RU, SC, SD, SE, SG, SK (utility model), SK, SL,
SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN,
YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (BW, GH,
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE,
SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA,
GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: CHEMICALLY BONDED BIOMATERIAL WITH TAILORED PROPERTIES

$$\lambda = \frac{d * (1 - V_F)}{(V_F)} \quad (I)$$

added filler, and where $\lambda = 10 \mu\text{m}$. The invention also relates to a device in connection with the preparation of a chemically bonded biomaterial element according to the invention.

(57) Abstract: A chemically bonded biomaterial element composed of an inorganic cement, exhibiting minimal dimensional changes upon hardening and long-time use, improved mechanical properties and improved translucency. An algorithm to describe the micro-structure is expressed as (I) where λ is the distance between filler particles of mean size d , and V_F is the volume content of non-reacted cement and

WO 2004/058194 A1